

REMARKS

A new claim, claim 34, has been added to the application. Claim 34 recites that the synthetic nonwoven fabric layers of the water-absorbing component of the body fluid absorbing product of the present invention each consist of semi-synthetic and/or synthetic fibers. Claim 34 is supported by the description in paragraph [0010] of the present specification.

(1) The Office requires a new title that is more descriptive of the claimed invention. The title has been amended to --WASHABLE AND REUSABLE BODY FLUID ABSORBING PRODUCT INCLUDING WATER-ABSORBING COMPONENT SYNTHETIC NON-WOVEN FABRIC--.

(2) The Office has objected to claim 11 as being unclear regarding the meaning of the terminology "fabric layers are composed of a compound fiber". The Office asks: "does an entire or partial layer or multiple layers consist of bi-component fibers, is there a requirement for a mixture of fibers in one or more layers, etc.?"

To avoid the objection to claim 11, claim 1, on which claim 11 depends, has been amended to recite that each of the synthetic nonwoven fabric layers comprises fibers having a fineness in the range of 0.01 dtex to 2 dtex and claim 11 has been amended to recite that at least one of the synthetic nonwoven fabric layers

comprises a bi-component fiber, elements of the bi-component fiber having been disintegrated by water jet treatment

(3) Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The Examiner's position is that non-woven fabric layers cannot be measured in terms of fineness - only fibers can be measured in terms of fineness such as dtex and the like and, thus, a person of ordinary skill in the art could not make the invention.

As noted previously, claim 1 has been amended to precisely recite that each of the synthetic nonwoven fabric layers of the body fluid absorbing product of the present invention comprises fibers having a fineness in the range of 0.01 dtex to 2 dtex. This amendment is supported, inter alia, by the description in paragraph [0012].

The amendment to claim 1 is believed to avoid the 35 U.S.C. § 112, first paragraph, rejection.

(4) Regarding the interpretation of claim 1, the meaning of the claim is believed to be clear from the amendments thereto as explained above.

(5) Precisely, the range recited in claim 1 of (0.01-2.0)dtex is equivalent to (0.009-1.8)denier or (0.001-0.2)tex.

(6) Claim 11 as amended requires that the water-absorbing component contain at least one bi-component fiber.

(7) Claims 1-2, 15-16, 23-24 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Mishima et al. (U.S. Patent No. 5,885,267; hereinafter "Mishima"). Claims 3-11, 13-14, 17-19, 21-22 and 25-30 are rejected under 35 U.S.C. 103(a) as being obvious over Mishima. Claim 12 is rejected under 35 U.S.C. 103(a) as being obvious over Mishima in view of Guarracino et al. (U.S. Patent No. 6,080,908; hereinafter "Guarracino"). Claim 20 is rejected under 35 U.S.C. 103(a) as being obvious over Mishima in view of Fujioka et al. (U.S. Patent No. 6,056,732; hereinafter "Fujioka"). Claim 28 is rejected under 35 U.S.C. as being obvious over Mishima in view of Rosch et al. (U.S. Patent No. 4,585,450; hereinafter "Rosch"). Claim 31 is rejected under 35 U.S.C. 103(a) as being obvious over Mishima in view of McBride et al. (U.S. Patent No. 5,217,803; hereinafter "McBride"). Claim 33 is rejected under 35 U.S.C. 103(a) as being obvious over Mishima in view of Lustberg (U.S. Patent No. 2,115,368; hereinafter "Lustberg").

Initially, it is noted that the invention of each of the cited references relates to a disposable, i.e., non-reusable, diaper. In clear contrast to this, the body fluid absorbing product of the

present invention is washable and reusable as now required by the claims of the application.

Referring now to the cited references and, particularly, to the Mishima reference on which all of the rejections depend, the Office identifies Mishima as disclosing "diaper 1 with liquid impermeable/breathable top sheet 3; and a liquid-permeable top sheet/water-absorbing component 2 (col. 2, ll. 48-51) comprising a plurality of synthetic non-woven layers 21, 22 having fineness in the range of 0.02-6.0 denier (col. 3, ll. 2-35 and 57-63)." (Action, page 4, lines 1-4).

The Office's characterization of the description of the diaper of Mishima is not correct. Numeral "3" in the description in col. 2, lines 48-51, of Mishima is a "liquid-impermeable backsheet" (Col. 2, line 50). Numeral "2" in the description in col. 2, lines 48-51, of Mishima is simply a "liquid-permeable topsheet". (Col. 2, line 49). The topsheet 2 is not water-absorbing. A liquid-absorbing core 4 is provided in the diaper 1 of Mishima between the liquid-permeable topsheet 2 and the liquid-impermeable backsheet 3. Therefore, Mishima does not support the rejection of the claims of the application for anticipation under 35 U.S.C. § 102. For the same reason, Mishima cannot be used to support a case of prima facie obviousness under 35 U.S.C. § 103(a) of the claims of the

application. The modifications of the diaper of Mishima and, more particularly, the modifications of the topsheet 2 of the diaper of Mishima proposed in the Action will not result in the washable and reusable body fluid absorbing product of the present invention as recited in the claims of the application.

Referring specifically to claim 1 of the present application as amended, an essential feature, i.e., required limitation, of the body fluid absorbing product of the present invention is "a water-absorbing component comprising a plurality of synthetic non-woven fabric layers, each of the fabric layers comprising fibers having a fineness in the range of 0.01 dtex to 2 dtex."

In contrast to this feature, in Mishima a "non-woven fabric" is used as "top layer 21" (col. 3, lines 10-13) of the disposable product. The "top layer 21" in Mishima corresponds to the "top sheet" in claim 1 of the present application and as such possesses little or no liquid absorbing ability as opposed to the "water-absorbing component" in the present invention. As the member, or element, of the disposable product of Mishima having a liquid absorbing function, Mishima makes use of an "absorbent core 4". Mishima discloses nothing regarding the structure and composition of the absorbent core 4 and does not describe that the "absorbent core 4" is made of a "non-woven fabric". Therefore, the "washable

and reusable" product, e.g., diaper, according to claim 1 of the present application, cannot be compared to the disposable product of Mishima and Mishima, alone or in any combination with the cited secondary references, cannot support obviousness of the product of claim 1 under 35 U.S.C. § 103(a).

In claims 3 to 10 of the present application, physical properties of the non-woven fabric for use as the "water-soluble component" of the body fluid absorbing product of claim 1 are particularly defined. Since Mishima does not disclose that a non-woven fabric is used in or for the "absorbent core 4" of its disposable product, the invention of claims 3 to 10 can not be obvious from the disclosure of Mishima (taken alone or in any combination with the cited secondary references).

In amended claim 11 of the present application, a product is specified which comprises a "bi-component fiber" used in the "water-absorbing component" and which has been disintegrated by a "water jet treatment". Mishima discloses "core-sheath type composite fibers" for the bottom layer 22 of the topsheet 2. It is not believed that these core-sheath type composite fibers can be disintegrated through an external force application such as by a "water jet treatment". Moreover, the use of such fibers in the top sheet of the disposable product of Mishima suggests nothing

concerning the use of a bi-component fiber which has been disintegrated by a water jet treatment in a water-absorbing component of a washable and reusable body fluid absorbing product.

In claim 13 of the present application, a specific definition is made of the shrinkage factor of the water-absorbing component subjected to industrial washing operations. In claim 14 it is defined that the "water-absorbing component" has been subjected to a shrinkage heat treatment in hot water at 80°C or more. Mishima, disclosing a disposable product, discloses and suggest nothing relating to washing of the water-absorbent product of the core.

Regarding the other references:

Fujioka relates to a "disposable diaper" (col. 1, line 6);

Rosch relates to "disposable diapers" (col. 1, line 9);

McBride related to "disposable diapers" (col. 1, lines 6-7);

and

Lustberg merely relates to "seams for joining together sheets of a waterproof material" (col. 1, lines 1-3). These references provide no suggestion or motive to modify the disposable product of Mishima as required to obtain a washable and reusable body fluid absorbing product as recited in the claims of the present application.

In order to attain a high water-absorbing capacity in the case of diapers made of a synthetic fiber, it is important that the water-absorbing component comprises a non-woven fabric composed of a fiber having a high fineness (0.01 dtex to 2 dtex) and, in addition, physical properties of the non-woven fabric, the water-absorbing component, are important.

In or for the production of a non-woven fabric comprising a high-fineness synthetic fiber, it is a highly desirable method to let a separable composite fiber be entangled and, at the same time, disintegrated by a water-jet punching treatment.

With a "repeatedly washable diaper", it is important that its shrinkage through an "industrial washing operation" is only limited, and a great difference of the claimed water-absorbing component from a cotton water-absorbing component resides in that its shrinkage is very small.

In order for a diaper to attain and maintain a desirable dry feeling to skin, it is important to use the above described water-absorbing component and, in addition, use a breathable top sheet in combination therewith.

Mishima, alone or in any combination with the other cited art fails to disclose or suggest a washable and reusable body fluid absorbing product which meets the limitations of the claims of the

present application. Removal of the 35 U.S.C. § 102 and 35 U.S.C. § 103(a) rejections of the claims is believed to be in order and is respectfully solicited.

The foregoing is believed to be a complete and proper response to the Office Action dated October 31, 2005, and is believed to place this application in condition for allowance. If, however, minor issues remain that can be resolved by means of a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number indicated below.

In the event that this paper is not considered to be timely filed, applicants hereby petition for an appropriate extension of time. The fee for any such extension may be charged to our Deposit Account No. 111833.

In the event any additional fees are required, please also charge our Deposit Account No. 111833.

Respectfully submitted,

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